

REMARKS

After amending the claims as set forth above, claims 1-25 remain pending in this application, and claims 18-22 are withdrawn from consideration.

Allowed Claims

Applicant appreciates the allowance of claims 3-8.

Rejections under 35 U.S.C. 102

Claims 1 and 9-12 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Publication No. 2004/0135726 to Shamir *et al.* (“Shamir”). Applicant respectfully disagrees and traverses this rejection for at least the following reasons.

As previously noted by Applicant in an earlier reply, embodiments of the present invention are directed to antennas used for wireless communication which provide size reduction and performance improvement. According to certain embodiments of the invention, a capacitively coupled antenna is coupled to a substrate. The antenna is defined by a first portion, a second portion and a third portion. As exemplarily illustrated in Figure 1c of the present application, a capacitive area 4 of the antenna is formed. The substrate is provided with a void, and the capacitive area of the antenna generally spans the void. This formation allows for increased capacitance or a smaller form factor/profile antenna, with an equivalent capacitance to a larger design. Accordingly, claim 1 recites “wherein a capacitive area of the antenna substantially spans the void.” Independent claim 9 recites a similar feature.

Shamir discloses a “gap” capacitor implemented on a printed circuit board or ceramic substrates. See Shamir, Abstract. The Examiner cites the gaps 202, 204 in Figure 2 of Shamir as constituting a void. This interpretation of Shamir is incorrect.

First, the gaps 202, 204 are not within the periphery of the substrate. As described in the specification and the figures of the present application, the void is within a periphery of the substrate. For example, Figures 1c, 2a, and 3a-c each illustrate a void (17) as being an empty space within the substrate (15). Specifically, the specification clearly describes the

substrate (15) as “defined by an outer periphery (16) and by an inner periphery (17), and the inner periphery defines a void within the substrate.” Specification, page 8, lines 19-20. In sharp contrast, the gaps 202, 204 disclosed by Shamir are exposed to the outside of the structure and, therefore, are not within the periphery of a substrate.

Second, the “gaps” of Shamir are not “voids”. Even a cursory reading of Shamir illustrates that the structure disclosed by Shamir includes material in the “gaps.” For example, the gap between two conductors of the capacitor is filled with a substrate material. See e.g., Shamir, ¶¶ [0037-38]. There is no “void” within the capacitive area between the two conductors.

Rather, Shamir teaches that a traditional, solid-filled capacitor may be used. See Shamir, ¶ [0038]. Use of a substrate material to fill the gap, as opposed to a void, lowers the capacitance, and a larger capacitor is required. By using a void as opposed to a substrate, the claimed invention is able to have a high capacitance, yet maintain a small form factor.

Thus, Shamir fails to teach or suggest at least the above-noted feature of the pending claims and does not anticipate claims 1 and 9. Therefore, claims 1 and 9 are patentable. Claims 10-12 depend from allowable claim 9 and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole.

Rejections under 35 U.S.C. 103

The Examiner rejected claims 2, 13, 16 and 17 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shamir in view various other references. Claims 2, 13, 16 and 17 depend from allowable claim 9 and are, therefore, patentable for at least that reason as well as for additional patentable features when those claims are considered as a whole.

Claims 23-25 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shamir in view of U.S. Patent No. 6,124,831 to Rutkowski (“Rutkowski”). Applicant respectfully traverses this rejection for at least the following reasons.

Independent claim 23 recites a capacitive area which “spans respective ones of the plurality of voids.” As noted above, Shamir fails to teach or suggest this feature. Rutkowski fails to cure this deficiency of Shamir. Therefore, claim 23 is patentable. Claims 24 and 25 depend from allowable claim 23 and are, therefore, patentable for at least that reason as well as for additional patentable features when those claims are considered as a whole.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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